ABSTRACT OF THE DISCLOSURE

A processor supports a mode in which the default operand size is 32 bits, but which supports operand size overrides to 64 bits. Furthermore, the default operand size may automatically be overridden to 64 bits for instructions having an implicit stack pointer reference and for near branch instructions. The overriding of the default operand size may occur without requiring an operand size override encoding in these instructions. In one embodiment, the instruction set specifying the instructions may be a variable byte length instruction set (e.g. x86), and the operand size override encoding may be a prefix byte which increases the instruction length.